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(54) Abstract Title

Connecting a portable telephone and a computer terminal such that the computer terminal supplies power for the telephone

(57) A PCMCIA card 7 is connected to a portable digital telephone 6. The card is inserted into a data terminal 1 to enable data communication via the portable telephone antenna 65. The power supply to the portable telephone may be switched between the portable telephone internal battery 8 and an external power supply, eg. that of the data terminal equipment depending on the state of communication of the telephone. If the telephone is out of service area or in the waiting state for voice communication or in a standby state for packet communication, power may be supplied via the PCMCIA card from the external power source. If the telephone is engaged in voice communication or is transmitting a packet communication, power is supplied from the telephone's internal battery. This enables consumption of battery power to be reduced.

FIG. 1

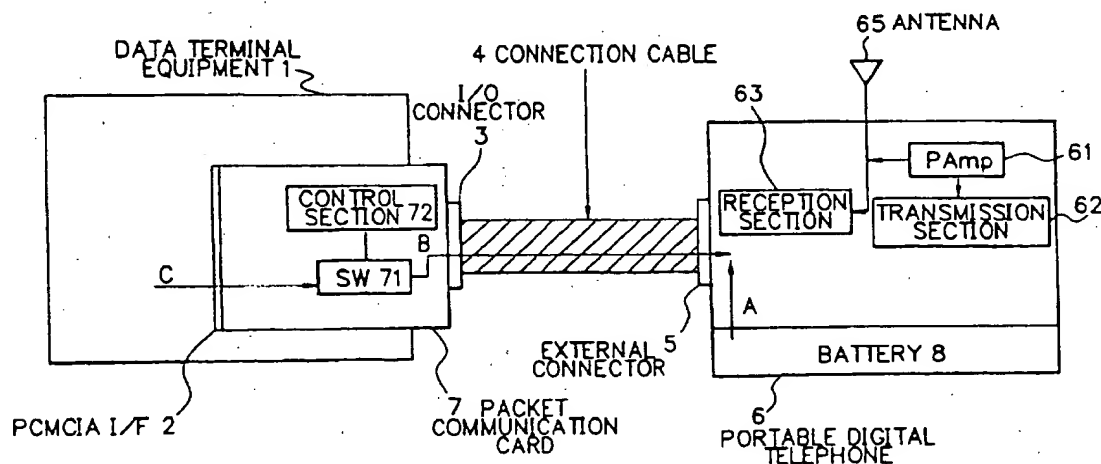


FIG. 1

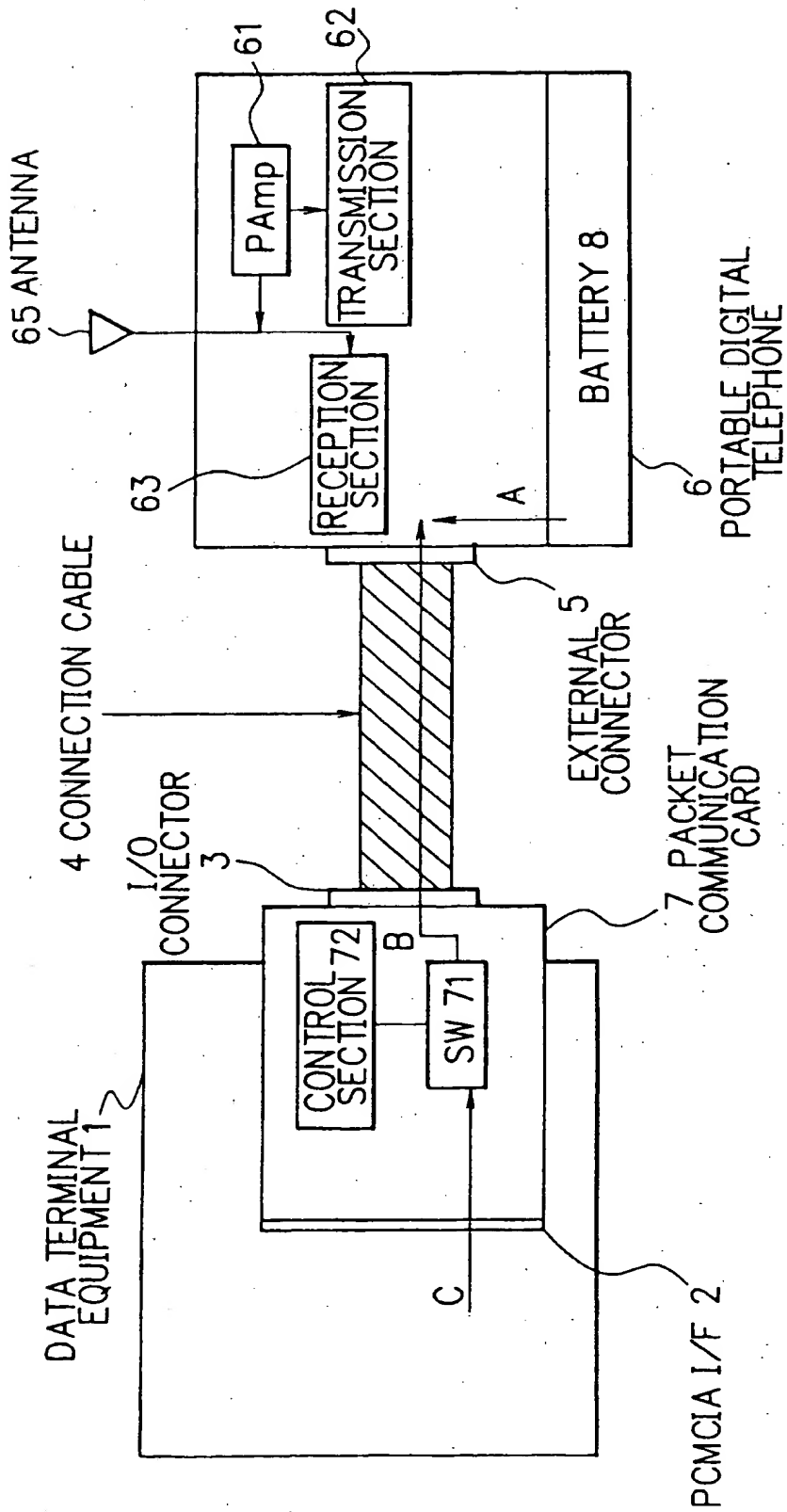


FIG. 2

UP-SERIAL SIGNAL	SERIAL SIGNAL MEASURE FOR TRANSFERRING FROM CARD TO PORTABLE MEASURE
DOWN-SERIAL SIGNAL	SERIAL SIGNAL MEASURE FOR TRANSFERRING FROM PORTABLE MEASURE TO CARD
POWER SOURCE INSIDE-OUTSIDE DISCRIMINATION SIGNAL	SIGNAL FOR CHANGING SUPPLY POWER OF PORTABLE MEASURE INTO EITHER INSIDE OR OUTSIDE SIGNAL
EXTERNAL POWER SOURCE SUPPLY SIGNAL	TERMINAL FOR IMPLEMENTING SUPPLY POWER SOURCE OF PORTABLE MEASURE FROM EXTERNAL SIDE

FIG. 3

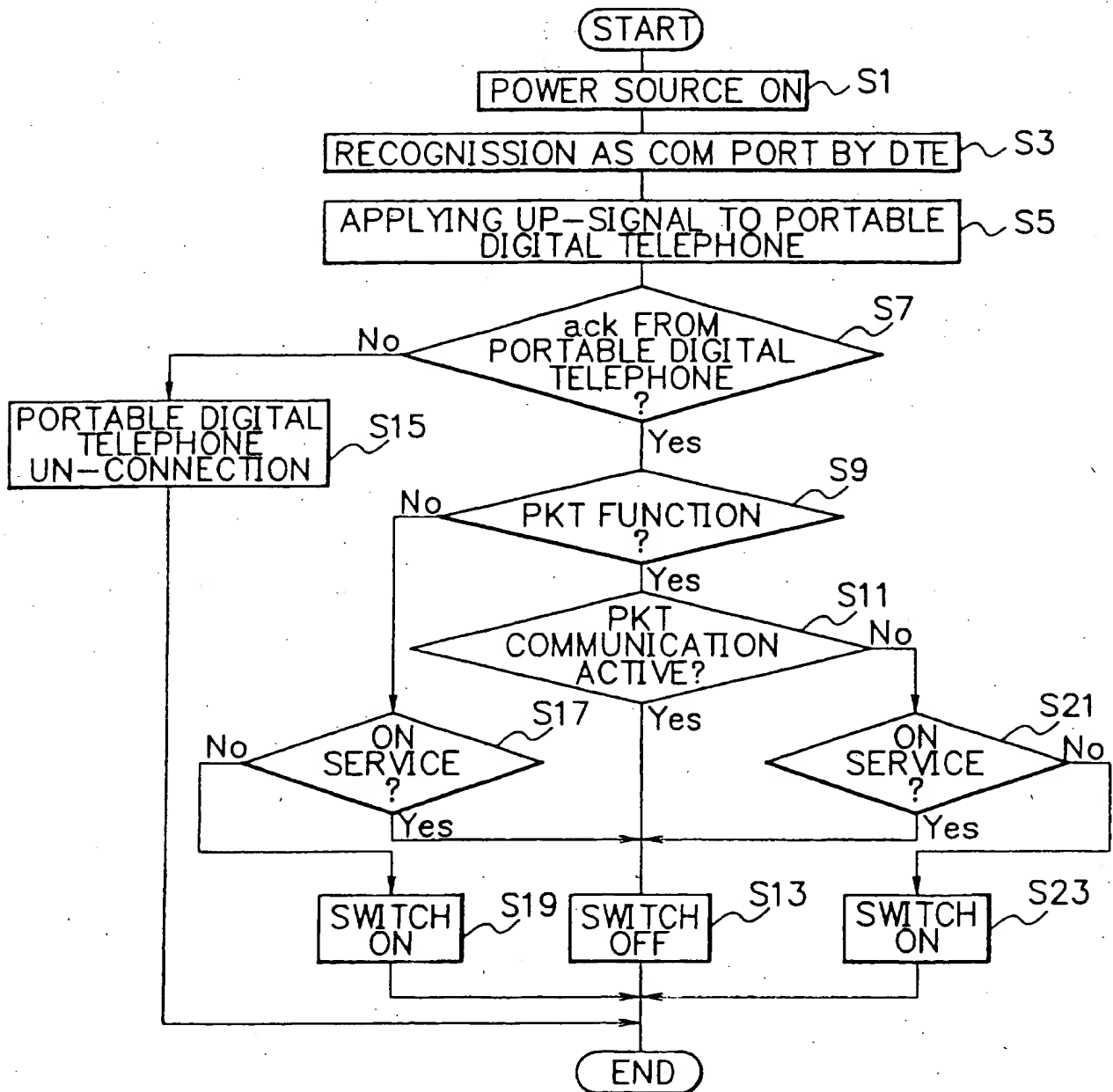
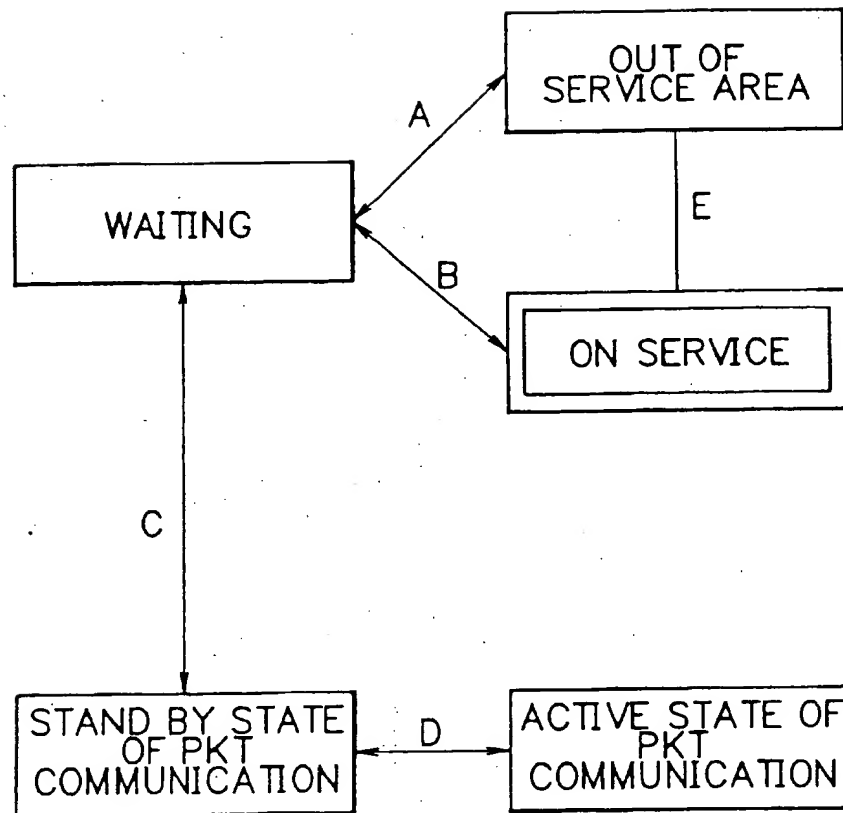


FIG. 4



## PACKET COMMUNICATION CARD

## BACKGROUND OF THE INVENTION

The present invention relates to a packet communication card. More to particularly, this invention relates to the packet communication card which is connected to a portable digital telephone, and which is inserted into a data terminal equipment.

## Description of the Prior Art

Formerly, there is well known a packet communication in which communication is implemented such that a data terminal equipment (hereinafter referred to as simply DTE) such as a note-type personal computer and so forth are connected to a portable digital telephone, by way of the packet communication using the portable digital telephone.

In this conventional packet communication, the packet communication is implemented while connecting the portable digital telephone, the packet communication card, and the DTE.

On the other hand, with respect to the portable digital telephone, there is required miniaturization and lightening in order to improve convenient property. For this reason, there is a limit concerning a battery which is to be loaded, thus capacity of the battery to be loaded becomes the problem in the portable digital telephone.

The Japanese Patent Application Laid-Open No. HEI 2-279032 discloses a portable digital telephone by way of the prior art in order to achieve the problem in terms of power source (battery) in the portable digital telephone.

According to this Prior Art, there is provided the first external power source input terminal and the second external power source input terminal connected to charging circuit by way of the input terminals of external power source of the portable digital telephone. There is connected the second external power source input terminal to

the high frequency amplifying section of the receiving section and so fourth with the result that there is intended decrease of current consumption and there is prevented deterioration of characteristic of the reception sensitivity and so forth.

5       The Japanese Patent Application Laid-Open No. HEI 5-130012 discloses a portable digital telephone by way of the same prior art.

According to this Prior Art, there is intended to suppress unnecessary power consumption by supplying power source intermittently to the radio receiving circuit.

10       As described above, there is well known the portable digital telephone, the packet communication card, and the packet communication with DTE connected by way of the conventional packet communication. However, there is the problem that although the DTE or the packet communication card is of the condition that the DTE, or  
15       the packet communication card is capable of operating sufficiently, consumption of the battery of the portable digital telephone disables the packet communication from communicating. Because demand for miniaturization in relation to the battery of the portable digital telephone brings shortage of capacity.

20       Namely, since the power source of DTE differs from the supply power source toward the portable digital telephone, the packet communication using the packet communication card becomes impossible when the power source of the portable digital telephone is consumed.

25       In order to achieve the above problem there might be considered that it causes the power to be supplied to the portable digital telephone from only the DTE. However, there is established the upper limit in every DTE in terms of the power which is capable of supplying thereto by PCMC I A ( Personal Computer Memory Card International  
30       Association ) I/F applied for the packet communication card. In addition

thereto, there is scarcely practical effect because the DTE has a power requirement which is incapable of being supplied from the DTE to the portable digital telephone during packet communication (in particular, during an active state of transmission). Here PCMA I A I/F is the interface established by the Personal Computer Memory Card International Association.

Further, in the Prior Art which is disclosed in the Japanese Patent Application Laid-Open No. HEI 2-279032, and which is disclosed in the Japanese Patent Application Laid-Open No. HEI 5-120012, there is not disclosed the case where it causes the portable digital telephone to be used in the packet communication. There is intended to be low power consumption by using a power source provided for the portable digital telephone, however, it is incapable of solving the problem that the packet communication is impossible because of the consumption of the battery of the portable digital telephone.

### SUMMARY OF THE INVENTION

In view of the foregoing, it is an object of the present invention to solve the above-mentioned problems by providing a packet communication card which enables power consumption of the battery of the portable digital telephone in accordance with the state of the portable digital telephone in use with the packet communication card for packet communication.

According to the first aspect of the present invention, there is provided a packet communication card provided with a COM port for implementing packet communication and connectable to a portable digital telephone and a data terminal equipment, said card comprising means for reducing power consumption of a battery of said portable digital telephone by selecting one power source from a plurality of power sources for supplying power to said



portable digital telephone depending on a state of communication of said portable digital telephone.

5 Preferably, the card further comprises a switch for implementing a change of the power source to said one power source.

The card may further comprise a control section for controlling said change of the power source to said one power source.

10 There may be transmitted a serial signal in relation to said portable digital telephone so that it causes the state of communication to be recognised in connection with said portable digital telephone.

The change to a power source may be implemented based on the state of communication of said portable digital telephone and also based on demand of packet communication from said data terminal equipment, said one power  
15 source being one of a plurality of power sources for supplying power of the portable digital telephone.

In a second aspect, the present invention provides a combination of a portable digital telephone, a data terminal equipment and a packet communication card according to any preceding claim.

20 A state of communication of the portable digital telephone may include one or more of an active state of packet communication, a stand by state of packet communication, a waiting state of voice service, an out of service area of the voice area, and a service state of the voice service.

One power source may be integrated in said portable digital telephone for supplying power to said portable digital telephone.

One power source may be integrated into said data terminal equipment for supplying to said portable digital telephone.

### BRIEF DESCRIPTION OF THE DRAWINGS

Preferred features of the present invention will now be described, purely by way of example only, with reference to the accompanying drawings, in which:-

Fig. 1 is a block diagram showing a configuration a packet communication system using one embodiment of a packet communication card according to the present invention.

Fig. 2 is a view showing a signal line and terminal which are connected to the packet communication card shown in Fig. 1;

Fig. 3 is a flowchart showing operation of the packet communication system shown i Fig. 1; and

Fig. 4 is a view showing a translation state of the portable digital telephone used in the packet communication system shown in Fig. 1.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Fig. 1 is a block diagram showing a configuration of a packet communication system using one embodiment of a packet communication card according to the present invention.

As shown in Fig. 1, the packet communication card 7 is provided with a switch (in Fig. 1 referring to SW) 71 for changing the power source supplying power to a portable digital telephone 6, a control

section 72 for controlling operation of the switch 71, a PCMC I A I/F 2, and an I/O connector 3.

Further, the packet communication card 7 is inserted into the DTE 1 as shown in Fig. 1. The DTE 1 is provided with its own power source ( not illustrated ).

Furthermore, the packet communication card 7 is connected to the portable digital telephone 6 through an external connector 5.

The portable digital telephone 6 is provided with the external connector 5, a battery 8 providing the power source to the telephone 6, a power amplifier (in Fig. 1 referring to P Amp) 61, a transmission section 62, reception section 63, and an antenna 65.

Next, there will be described operation of the packet communication system using the packet communication card according to the present invention shown in Fig. 1.

The power source is supplied to the packet communication card 7 through the PCMC I A I/F 2 from the DTE 1 ( for instance note-type personal computer and so forth ). The supply of the power source is implemented from the battery 8 generally in terms of the portable digital telephone 6. ( an arrow A )

Here, there will be described detection of connection between the DTE 1 and the packet communication card 7. As shown in Fig. 1, the DTE 1 implements detection of connection thereof by scanning CIS of the packet communication 7 through the PCMC I A I/F 2 when the packet communication card is inserted for connection thereto. Subsequently, there is implemented arrangement of configuration for the sake of operation of the packet communication card 7 by way of an extended COM port.

Further, the supply of the power source from the DTE 1 to the packet communication card 7 is implemented such that it causes the power to be supplied to the switch 71 from the power source ( not

illustrated ) provided with the DTE 1 ( an arrow C ).

5 The portable digital telephone 6 is a portable digital telephone which is capable of implementing at least one of the voice service and the packet communication. Further, there is taken the state in which there is a transmission data in the state of voice service and in the state of packet communication, or there is a receiving data in the state of voice service and in the state of packet communication to be active state.

10 In this active state, since the portable digital telephone 6 is required to use the power amplifier 61 (P Amp); thus the power consumption becomes considerably large.

15 On the other hand, in the state of waiting, in the state of out of service area, or stand by state where there is no data nevertheless while packet communicating, the power supplied to the transmission section 62 on the inside of the portable digital telephone 6 is cut, and supply of the power to the reception section 63 is implemented intermittently, therefore, the power supply which is necessitated by the portable digital telephone is capable of being suppressed by far in comparison with the state of on communicating.

20 Here, there will be described the signal line and the terminal which are provided for the external connector 5 and the packet communication card 7 which are connected to each other through the connection cable 4 in accordance with Fig. 2. As shown in Fig. 2, the signal line provided for the packet communication card 7 is a signal line for changing two pieces of serial lines into one piece thereof, and the terminal provided for the external connector 5 is a terminal for implementing supply of power source of the portable digital telephone from the external side.

25 The above-described signal line is a signal line for transmitting the present state of the portable digital telephone to the packet

communication card 7. Furthermore, as shown in Fig. 2, an up-serial signal flows into the serial signal line transferring the up-serial signal from the packet communication card to the portable digital telephone, and a down-serial signal flows into the serial signal line transferring the down-serial signal from the portable digital telephone to the packet communication card.

Furthermore, a power source inside-outside discrimination signal flows in the signal line to change the supply power of the power source of the portable digital telephone to the inside ( battery ) or to the outside, and an external power source supply signal is inputted to the terminal when there is implemented supply of power of the power source of the portable digital telephone.

The packet communication card 7 shown in Fig. 1 judges the state of the portable digital telephone 6 based on the signal flowing through the signal line.

By way of the state of the portable digital telephone, there are the state of packet communication and the active state, the state of packet communication and the stand by state, the state of waiting, the state of out of service area, and the state of call and so forth. However, the packet communication card of the present invention enables change of the supply power to be implemented while judging the various states of the portable digital telephone in terms of the matters with the exception of above stated respective states, while since the invention is not restricted above respective states.

Thus, when the portable digital telephone is particularly in the state of out of service area, in the state of waiting, or in the state of packet communication and stand by state, while judging these states, the control section 72 of the packet communication card 7 feeds the power source fed from the DTE 1 into the portable digital telephone 6 through the PCMC I A I/F 2 while controlling the switch 71 ( an arrow

B).

Next, there will be described hereinafter in detail the packet communication system using one embodiment of the packet communication card according to the present invention shown in Fig. 1.

5 Referring to Fig. 1, the power source is supplied from the DTE 1 through the PCMC I A I/F 2 on the ground that the packet communication card 7 is inserted into the DTE 1 ( an arrow C ).

Furthermore, the packet communication card 7 is recognized by way of I/O card after insertion, thus being arranged configuration for  
10 the sake of operation thereof so as to be seen by way of the extended COM port seeing from the DTE 1.

Moreover, as shown in Fig. 1, the packet communication card 7 is provided with the control section 72. The control section 72 is provided with a COM port ( not illustrated ) which is necessary for the  
15 packet communication. The control section 72 implements analysis of received data from the DTE 1 through the COM port, thus transmitting it to the portable digital telephone 6. Or the control section 72 implements transmission of the data received from the portable digital telephone 6 through the COM port.

20 Moreover, the packet communication card is provided with the switch 71 described above. The switch 71 changes the power source fed from the DTE 1 through the PCMC I A I/F 2 so as to output to an external power source terminal of the external connector 5 of the portable digital telephone 6 ( an arrow B ).

25 The switch 71 is constituted such that control of ON/OFF is capable of being implemented by the control section 72, and the initial value becomes OFF. Here, with respect to the switch 71 shown in Fig. 1, when the switch 71 is ON, it becomes the connection ( an arrow B ) in which the power source is fed into the portable digital telephone 6 from  
30 the DTE 1, while when the switch 71 is OFF, it becomes the connection

( an arrow A ) in which the power source is fed into the portable digital telephone 6 from the battery.

Further, the portable digital telephone 6 is generally fed from the battery 8, however, it is capable of being fed the power source from the external power source supply terminal of the external connector 5 by controlling connection of the power source inside-outside discrimination terminal of the external connector 5 toward the external side.

Next, there will be described one example of operation of the packet communication system using one embodiment of the packet communication card shown in Fig. 1 referring to Fig. 3. Fig. 3 is a flowchart showing operation of the packet communication system shown in Fig. 1.

Firstly, the power source is to be ON (STEP S1), the packet communication card 7 is recognized by DTE 1 by way of the COM port (STEP S3), the control section 72 applies the up-signal to the portable digital telephone 6 (STEP S5).

Subsequently, the control section 72 confirms whether or not ack signal is received by way of the signal informing operation being completed from the portable digital telephone 6 (STEP S7). When there is no ack signal (No), being shifted to STEP S15, thus recognizing the portable digital telephone to be disconnection state, before the operation is terminated.

In the confirmation of STEP S7, when there is the ack signal (Yes), being shifted to STEP S9, subsequently, in the STEP S9, thus being implemented confirmation whether or not there is packet (PKT) communication function in the portable digital telephone.

When there is no the packet communication function (No), being shifted to STEP S17, thus there is implemented the confirmation whether or not it is in the state of service. In this confirmation, when it

is not in the state of service (No), being shifted to STEP S19, there is regarded the state of the portable digital telephone to be the state of out of service area, the state of waiting or the like, thus rendering the switch 71 ON, namely, it causes the power source to be fed from the DTE 1 to the portable digital telephone 6.

Further, in the confirmation of STEP S17, when it is in the state of service (Yes), being shifted to STEP S13, thus rendering the switch 71 to be ON, namely, causing the power source to be fed from the own battery 8 to the portable digital telephone 6.

In the confirmation of STEP S9, when there is provided with the packet communication function (Yes), being shifted to STEP S11, thus confirming whether or not the packet communication is active. When the packet communication is active (Yes), being shifted to STEP S13, thus rendering the switch 71 to be OFF, subsequently, the operation is terminated.

In the confirmation of STEP S11, when the packet communication is not active (No), being shifted to STEP S21, in the STEP S21, thus confirming whether or not it is in the state of service.

In the confirmation of STEP S21, when it is in the state of service (Yes), being shifted to STEP S13, rendering the switch 71 to be OFF, thus terminating operation.

In the confirmation of STEP S21, when it is not in the state of service (No), being shifted to STEP S23, there is regarded the state of the portable digital telephone is in the state of out of service area, in the state of waiting, or in the state of packet communication and the stand by state, thus rendering the switch 71 to be ON, namely, causing the power source to be fed from the DTE 1 to the portable digital telephone 6.

There will be described in detail the respective operations shown in the above flowchart referring to Figs. 1, 2, and 3. The packet



communication 7 is inserted into the DTE 1, thus the supplying power source is implemented from the DTE 1 through the PCMC I A I/F 2 (STEP S1), and the DTE 1 implements arrangement of the configuration for the sake of operation of the packet communication card 7 by way of the extended COM port by scanning CIS (card information structure) of the packet communication card.

The packet communication card 7 is recognized as the I/O card (STEP S3), before the packet communication card 7 transmits the serial signal to the portable digital telephone 6 through the serial signal line (Fig. 2) connected to the I/O connector 3 in order to judge whether or not the portable digital telephone is connected, and whether or not the portable digital telephone 6 is a portable digital telephone capable of being implemented the packet communication (STEP S5). When there is not received the ack signal in terms of the up-signal, the portable digital telephone is in the state of disconnection (STEP S15), thus being not implemented the control for the switch 71.

Next, there is confirmed the classification of the portable digital telephone 6 (STEP S9), when the portable digital telephone is not equivalent to the PKT (packet) communication, judging the state of the portable digital telephone whether it is in the state of service or it is in the state of out of service area, in the state of waiting, or the like, when it is in the state of service, it causes the control to be not implemented in relation to the switch 71 (STEP S17).

When it is in the state of out of service area, in the state of waiting or the like, rendering the switch 71 to be ON (STEP S19), thus there is set the power source inside-outside discrimination terminal of the portable digital telephone to the outer section. In this state, since the power source is fed to the portable digital telephone 6 from the external power source terminal of the external connector 5 instead of the battery 8 so that capacity of the battery is not consumed.

Here, there will be described the case when there is demand of outgoing from the DTE 1 by ATD command and so forth. The transition of this state corresponds to the route B or the route E in the transition of respective states shown in Fig. 4. Fig. 4 is a state transition view showing respective states of the portable digital telephone. However, the state surrounded by double solid line of the states shown in Fig. 4 (in the state of service, in the state of PKT service and active state) is the state of being fed the power source from the own battery 8.

Next, in STEP S7, when there is received the serial signal of incoming from the portable digital telephone 6, it causes the power source inside-outside discrimination terminal to be changed into the internal section, subsequently, there is set the switch 71 to be OFF, before transmitting up-serial signal of off-hook to the portable digital telephone.

Then, the portable digital telephone is shifted to the state of voice communication, thus supply power of the power source is implemented from the battery 8. When there is detected circuit disconnection in the state of voice communication (route B, route E), rendering the switch 71 to be ON, thus establishing the power source inside-outside discrimination terminal of the portable digital telephone 6 to the terminal for outside use.

Next, there will be described the state transition to the packet communication from the state of waiting. The state transition corresponds to the route C of the routes shown in Fig. 4.

When there is a demand of packet outgoing from the DTE 1 by the ATD command and so forth, it causes the power source inside-outside discrimination terminal to be changed into the terminal for inside use, then establishing the switch 71 to be OFF, before transmitting the up-serial signal of the OFF-hook to the portable digital telephone 6.

Subsequently, the portable digital telephone 6 is shifted to the state of packet communication (route D). However, in this state, when there is no data for transmitting from the DTE 1 or there is no data for receiving from the other party for the packet connection during definite time, the portable digital telephone 6 is shifted in the state of packet communication and active state to the state of stand by (route D).

When the portable digital telephone 6 detects that the portable digital telephone 6 is shifted to the stand by state, it causes the switch 71 to be ON, thus establishing the power source inside-outside discrimination terminal of the portable digital telephone 6 to the terminal for outside use.

Depending on the above described constitution and operation, in one embodiment of the packet communication card according to the present invention shown in Fig. 1, it enables consumption of the battery of the portable digital telephone to be reduced, because it causes the power source to be changed such power source is supplied to the portable digital telephone in accordance with the state of communication for the portable digital telephone.

As is clear from the above description, according to the embodiment of the present invention, if the state of the portable digital telephone is of the fixed state in which it is in the state of out of service area, in the state of waiting, and in the state of stand by of packet communication, it causes the supply of the power source to the portable digital telephone to be implemented from the DTE (data terminal equipment), therefore, there can be provided the packet communication card capable of reducing consumption of the battery which is included in the portable digital telephone.

Further, since there is implemented supply of the power source for the portable digital telephone from the DTE (data terminal equipment) in accordance with the state of the portable digital

telephone, the can be provided the packet communication card capable of using the battery efficiently while allocating whole capacity of the battery for the sake of communication (voice communication, packet communication), such battery is included in the portable digital telephone.

In particular, since there is selectively changed the power source for supplying power source to the portable digital telephone in accordance with the state of communication for the portable digital telephone, there can be provided the packet communication card capable of reducing consumption of the battery for the portable digital telephone.

With the provision of a switch for changing to one power source, there can be provided a packet communication card capable of executing surely the change of the power source.

With the provision of a control section for controlling the change of the switch, there can be provided a packet communication card capable of implementing accurately the supply of the power source in accordance with the state of communication of the portable digital telephone.

As the state of the communication of the portable digital telephone may include the active state of packet communication, for instance, in the active state of the packet communication, there can be provided a packet communication card capable of implementing efficiently utilization of the battery for the portable digital telephone, further capable of reducing consumption of the battery for the portable digital telephone.

In addition, as the state of the communication of the portable digital telephone may include the active state of packet communication, for instance, in the stand by state of the packet communication, there can be provided a packet communication card capable of implementing efficiently utilization of the battery for the portable digital telephone, further, capable of reducing consumption of the battery for the portable digital telephone by utilizing the power source of the data terminal equipment.

In addition, as the state of the communication of the portable digital telephone may include the state of waiting in the voice call, there can be provided the packet communication card capable of implementing efficiently utilization of the battery for the portable digital telephone, further, capable of reducing consumption of the battery for the portable digital telephone by utilizing the battery of the data terminal equipment.

As the state of communication of the portable digital telephone may also include the state of out of service area in the voice call, for instance, in the state of out of service area of the voice service, there can be provided the packet communication card capable of implementing efficiently utilization of the battery for the portable digital telephone, further, capable of reducing consumption of the battery for the portable digital telephone by utilizing of the data terminal equipment.

As the state of communication of the portable digital telephone may include the state of service in the voice service, for instance, in the date of

service in the voice service, there can be provided the packet communication card capable of implementing efficiently utilization of the battery consumption of the digital telephone, further capable of reducing consumption of the battery for the portable digital telephone by utilizing the battery for the portable digital telephone.

As one power source of the power sources for supplying power to the portable digital telephone may be the power source included in the portable digital telephone, there can be provided the packet communication card capable of selecting to be utilized the power source included in the portable digital telephone.

As one power source of the power sources for supplying power to the portable digital telephone may be the power source included in the data terminal equipment, there can be provided the packet communication card capable of utilizing the power source included in the data terminal equipment.

As there may be provided the PCMC I A I/F for supplying power source included in the data terminal equipment to the packet communication card, there can be provided the packet communication card capable of implementing easily supply of the power source from the data terminal equipment.

As the state of communication of the portable digital telephone may be recognised by transmitting the serial signal in relation to the portable digital telephone, there can be provided the packet communication card capable of

recognising more surely the state of the portable digital telephone.

5 As the change to one power source of the power sources for supplying  
the power source to the portable digital telephone may be based on the packet  
communication demand from the data terminal equipment, when the data  
terminal equipment requires execution of packet communication, irrespective of  
the state of the portable telephone there can be provided the packet  
communication card capable of implementing the packet communication while  
10 performing efficiently utilization of the battery of the portable digital telephone,  
further capable of reducing consumption of the battery for the portable digital  
telephone by changing power source.

Each feature disclosed in this specification (which term includes the  
claims) and/or shown in the drawings may be incorporated in the invention  
15 independently of other disclosed and/or illustrated features.

Statements in this specification of the "objects of the invention" relate to  
preferred embodiments of the invention, but not necessarily to all embodiments  
of the invention falling within the claims.

20 The description of the invention with reference to the drawings is by way  
of example only.

The text of the abstract filed herewith is repeated here as part of the  
specification.

A packet communication card 7 enables consumption of a battery for a portable digital telephone 6 to be reduced by changing supply power for the portable digital telephone 6 in accordance with a state of the portable digital telephone 6. The packet communication card 7 which is connected to the portable digital telephone 6, and which is provided with a COM port necessary for implementing packet communication, is inserted into a data terminal equipment 1. There is reduced consumption of the battery 8 for the portable digital telephone 6 by selecting to be changed one of a plurality of power sources for supplying power to the portable digital telephone 6 in accordance with the state of communication of the portable digital telephone 6. A switch 71 implements the change of supply power source.

Reference numerals appearing in the claims are by way of illustration only and shall have no limiting effect on the scope of the claims.



**CLAIMS**

1. A packet communication card 7 provided with a COM port for  
5 implementing packet communication and connectable to a portable digital  
telephone 6 and a data terminal equipment 1, said card comprising means for  
reducing power consumption of a battery 8 of said portable digital telephone 6  
by selecting one power source from a plurality of power sources for supplying  
power to said portable digital telephone 6 depending on a state of  
10 communication of said portable digital telephone 6.
2. A packet communication card as claimed in Claim 1, comprising a switch  
for implementing a change of the power source to said one power source.
- 15 3. A packet communication card as claimed in Claim 1 or 2, comprising a  
control section for controlling said change of the power source to said one  
power source.
4. A packet communication card as claimed in any preceding claim,  
20 comprising a PCMC I A (Personal Computer Memory Card International  
Association) I/F (Inter Face) for supplying power from a power source  
integrated in said data terminal equipment 1 to said packet communication card  
7.

5. A packet communication card as claimed in Claim 4, wherein there is transmitted a serial signal in relation to said portable digital telephone 7 so that it causes the state of communication to be recognised in connection with said portable digital telephone 6.

6. A packet communication card as claimed in any preceding claim wherein the change to a power source is implemented based on the state of communication of said portable digital telephone 6 and also based on demand of packet communication from said data terminal equipment 1, said one power source being one of a plurality of power sources for supplying power of the portable digital telephone 6.

7. A combination of a portable digital telephone, a data terminal equipment and a packet communication card according to any preceding claim.

8. A combination as claimed in Claim 7 wherein a state of communication of said portable digital telephone 6 includes an active state of packet communication.

9. A combination as claimed in Claim 7 or 8, wherein a state of communication of said portable digital telephone 6 includes a stand by state of packet communication.

- 5 10. A combination as claimed in any of Claims 7 to 9, wherein a state of communication of said portable digital telephone 6 includes a waiting state of voice service.
11. A combination as claimed in any of Claims 7 to 10 wherein a state of communication of said portable digital telephone 6 includes a state of out of service area of the voice service.
- 10 12. A combination as claimed in any of Claims 7 to 11, wherein a state of communication of said portable digital telephone 6 includes a service state of the voice service.
- 15 13. A combination as claimed in any of Claims 7 to 12, wherein one power source is integrated in said portable digital telephone 6 for supplying power to said portable digital telephone 6.
- 20 14. A combination as claimed in any of Claims 7 to 13, wherein one power source is integrated into said data terminal equipment 1 for supplying to said portable digital telephone 6.
- 25 15. A packet communication card, or a combination of a portable digital telephone, a data terminal equipment and a packet communication card, substantially as herein described with reference to and as shown in Figure 1 of the accompanying drawings.



Application No: GB 9900147.1  
Claims searched: 1-15

Examiner: Catherine Schofield  
Date of search: 9 June 1999

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.Q): H4L (LDGP, LDGX, LECTP, LECTX)

Int CI (Ed.6): H04L: 12/56; H04M: 1/72; H04Q: 7/32

Other: Online:- WPI, EPODOC, JAPIO

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2325119 A (NEC) - p.6, lines 8-21; p.8, line 16 to p.9, line 12; p.10, lines 12-25	
A	WO 96/21900 A1 (INTEL) - see particularly abstract	

X Document indicating lack of novelty or inventive step  
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